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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,329	03/13/2002	Yoshihito Ohta	10873.881USWO	2865

23552 7590 11/04/2004

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EXAMINER	
BELL, PAUL A	

ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/088,329	OHTA ET AL.	
	Examiner	Art Unit	
	PAUL A BELL	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10,14-18 and 20-22* is/are rejected.

7)☒ Claim(s) *11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8-10, 14-18 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakajima et al. (6,486,864).

With regard to claim 1 Nakajima et al. teaches a method for driving a liquid crystal display device having a liquid crystal panel (figure 1), the liquid crystal panel comprising a plurality of source lines to which pixel data are supplied (figure 1, item 2), a plurality of gate lines to which scanning signals are supplied (figure 1, item 1), pixel cells positioned in matrix form in correspondence with intersecting points of the source lines and the gate lines (figure 1, item 6), a source driver that drives the source lines based on an input image signal (figure 1, item 2 it is inherent that the source line has a source driver), a gate driver that drives the gate lines (figure 1, item 1 it is inherent that the gate line has a gate driver), and a back light (inherent that a lcd used for TV has a

back light and since these a transmisive LC a back light is essential for proper operation), the pixel cells being applied with a signal for initializing a state of a liquid crystal therein as well as pixel data in correspondence with the image signal in the pixel cells (column 5, lines 1-10, and figure 2, item "Assist signal writing scanning period" reads on "signal for initializing" and figure 2, item "Image signal writing scanning period" reads on "image signal") wherein a first period with a variable length for writing the signal for initializing a state of the pixel cells (column 3, lines 16 -19 "it is important to appropriately set the voltage value of the assist signal and the length of the period for the application of the voltage corresponding to the assist signal" therefore since it is settable it is inherently variable and figure 2, item "Assist signal writing scanning period") and a second period for writing pixel data are provided in one frame period (figure 2, item "Image signal writing scanning period" and "1 field period" therefore every frame period has at least one writing period), and a voltage level to be applied to each pixel cell in the first period is set such that each pixel cell retains a voltage Vsup higher than a voltage level to be applied to each pixel cell in the second period (column 3, lines 24-26, where it states generally "Therefore, the voltage value corresponding to

the assist signal is preferably set to a voltage value which exceeds the voltage range for the image signals" and further figure 2 shows the Vc assist and Vc sig where the difference between Vc assist and Vsmax to be largest which reads on the "Vsup" term used by applicant).

With regard to claim 17 Nakajima et al. teaches a liquid crystal display device having a liquid crystal panel, the liquid crystal panel (figure 1) comprising: a plurality of source lines to which pixel data are supplied (figure 1, item 2), a plurality of gate lines to which scanning signals are supplied (figure 1, item 1), pixel cells positioned in matrix form in correspondence with intersecting points of the source lines and the gate lines (figure 1, item 6), a source driver that drives the source lines based on an input image signal (figure 1, item 2 it is inherent that the source line has a source driver), a gate driver that drives the gate lines (figure 1, item 1 it is inherent that the gate line has a gate driver), and a back light(inherent that a lcd used for TV has a back light), the pixel cells being applied with a signal for initializing a state of a liquid crystal therein as well as pixel data in correspondence with the image signal in the pixel cells (column 5, lines 1-10, and figure 2, item "Assist signal writing scanning period" reads on "signal for initializing" and figure

2, item "Image signal writing scanning period" reads on "image signal") wherein a first period with a variable length for writing the signal for initializing a state of the pixel cells (column 3, lines 16 -19 "it is important to appropriately set the voltage value of the assist signal and the length of the period for the application of the voltage corresponding to the assist signal" therefore since it is settable it is inherently variable and figure 2, item "Assist signal writing scanning period") and a second period for writing pixel the data are set in one frame period (figure 2, item "Image signal writing scanning period" and "1 field period" therefore every frame period has at least one writing period), and a second period for writing pixel data in correspondence with the image signal in the pixel cells are set selectively in one frame period (figure 2, item "Image signal writing scanning period"), and means for setting a voltage level to be applied to each pixel cell in the first period such that each pixel cell retains a voltage Vsup higher than a voltage level to be applied to each pixel cell in the second period is provided (column 3, lines 24-26, where it states generally "Therefore, the voltage value corresponding to the assist signal is preferably set to a voltage value which exceeds the voltage range for the image signals" and further figure 2 shows the Vc assist and Vc sig where the difference

between Vc assist and Vsmax to be largest which reads on the "Vsup" term used by applicant).

With regard to claim 2 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein a ratio occupied by the first period in one frame period is set to be less than 20% (figure 2 since there are two fields in a frame 1/6 = 16.666 % < 20 %).

With regard to claim 3 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein when a voltage of a predetermined level or lower is applied to the pixel cell, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame (figure 2).

With regard to claim 4 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein when a voltage of a predetermined level or lower is applied to the same pixel cell continuously in a predetermined number of preceding frames including a current frame, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame (figure 2).

With regard to claim 5 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim

1, wherein the voltage Vsup is set variably for each frame (figure 2, item VS).

With regard to claim 6 Nakajima et al. teaches with regard to claim 6 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 3 wherein when it is judged that the first period needs to be set, a voltage Vsup to be applied in a next frame is set to be of a level not less than a voltage Vsup applied in an immediately preceding frame, while when it is judged that the first period does not need to be set, a voltage Vsup to be applied in a next frame is set to be of a level not more than a voltage Vsup applied in an immediately preceding frame (Inherent feature because the RMS voltage on the LC must equal zero over time to avoid damage to LC).

With regard to claim 8 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 3 or 4, wherein when it is judged that the first period needs to be set, a first period to be set in a next frame is set to be not less than a length of a first period set in an immediately preceding frame, while when it is judged that the first period does not need to be set, a first period to be set in a next frame is set to be not more than a length of a first period set in an immediately preceding frame(Inherent feature because the

RMS voltage on the LC must equal zero over time to avoid damage to LC).

With regard to claim 9 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up brighter in the frame in which the first period is set than in the frame in which the first period is not set(Inherent feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

With regard to claim 10 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up bright in correspondence with a length of the first period (Inherent correspondence feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

With regard to claim 14 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein when the image signal as a digital signal is converted to an analog signal inside the source driver, a reference voltage used for conversion is switched in synchronization with a driving timing of the source line and the gate line (Inherent because DAC works this way).

With regard to claim 15 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein the pixel data are supplied to the source lines in not more than half a time that can be spent for scanning one scanning line in one frame (figures 2 and 4 illustrate this feature)

With regard to claim 16 Nakajima et al. teaches the method for driving a liquid crystal display device according to claim 1, wherein a voltage corresponding to pixel data for one screen is applied to each pixel cell in not more than half a time of one frame period (figures 2 and 4 illustrate this feature)

With regard to claim 18 Nakajima et al. teaches the liquid crystal display device according to claim 17, wherein the setting means sets the voltage Vsup variably for each frame (figures 2 item vs and 4).

With regard to claim 20 Nakajima et al. teaches the liquid crystal display device according to claim 17, further comprising back light luminance control means for controlling brightness of the back light, wherein the back light luminance control means controls the back light such that the back light lights up bright in correspondence with a length of the first period. (Inherent correspondence feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

With regard to claims 21 and 22 all the limitations were addressed above.

Allowable Subject Matter

Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

3. Applicant's arguments with respect to claims 1 and 17 have been considered but are moot in view of the new ground(s) of rejection.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Bell whose telephone number is (703) 306-3019.

If attempts to reach the examiner by telephone are unsuccessful the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377 can help with any inquiry of a general nature or relating to the status of this application.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or Faxed to: (703) 872-9306

Or Hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist)

Paul Bell
Art unit 2675
November 1, 2004

CHANH NGUYEN
PRIMARY EXAMINER